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(54) **Network-based document review tool**

(57) A method and system in a computer network for assisting users in collectively creating documents with minimal document intrusiveness via the computer network. Initially, a document is displayed in a graphic interface of a computer in a computer network, such that the document may also be displayed at any one of a number of computers within the computer network. Next, portions (136, 138, 140) of the document (134) are designated which may be commented upon by users. These portions of the document are automatically associated with displayable interface (150, 160) wherein users may enter comments pertaining to the document. The displayable interface is then displayed within the graphic interface, in response to user input. A user is then permitted to enter comments pertaining to the document within the displayable interface, such that the comments may be separately stored, subsequently retrieved and utilized in the creation of the document without cluttering. The displayable interface is then automatically closed upon completion of an entry of comments pertaining to the document within the displayable interface.

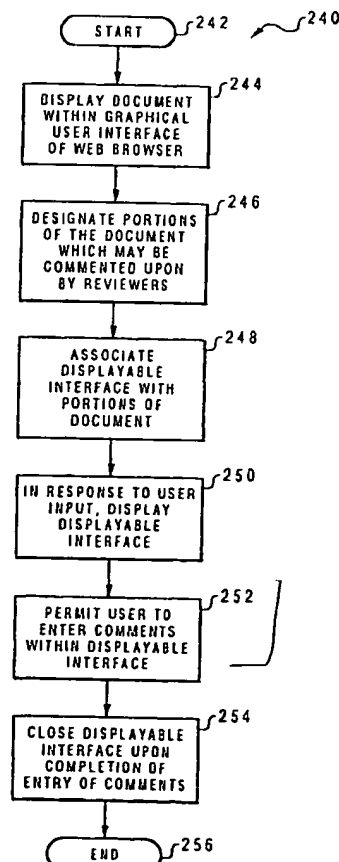


Fig. 10

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Description

Technical Field

[0001] The present invention relates to improved information-retrieval methods and systems. In particular, the present invention relates to improved information-retrieval methods and systems utilized in association with graphical user interfaces. Still more particularly, the present invention relates to methods and systems for collectively developing and modifying networked-based documents.

Description of the Related Art

[0002] The development of computerized information resources, such as remote networks, allows users of data-processing systems to link with other servers and networks, and thus retrieve vast amounts of electronic information heretofore unavailable in an electronic medium. Such electronic information is increasingly displacing more conventional means of information transmission, such as newspapers, magazines, and even television.

[0003] In communications, a set of computer networks which are possibly dissimilar from one another are joined together by "gateways" that handle data transfer and the conversion of messages from the sending network to the protocols used by the receiving network, with packets if necessary. A gateway is a device used to connect dissimilar networks (i.e., networks utilizing different communication protocols) so that electronic information can be passed from one network to the other. Gateways transfer electronic information, converting such information to a form compatible with the protocols used by the second network for transport and delivery.

[0004] One type of remote network commonly utilized in recent years is the Internet. The term "Internet" is an abbreviation for "Internetwork," and refers commonly to the collection of networks and gateways that utilize the TCP/IP suite of protocols, which are well-known in the art of computer networking. TCP/IP is an acronym for "Transport Control Protocol/Interface Program," a software protocol developed by the Department of Defense for communication between computers. The Internet can be described as a system of geographically distributed remote computer networks interconnected by computers executing networking protocols that allow users to interact and share information over the networks. Because of such wide-spread information sharing, remote networks such as the Internet have thus far generally evolved into an "open" system for which developers can design software applications for performing specialized operations or services, essentially without restriction.

[0005] Electronic information transferred between data-processing networks is usually presented in hypertext, a metaphor for presenting information in a manner

in which text, images, sounds, and actions become linked together in a complex non-sequential web of associations that permit the user to "browse" or "navigate" through related topics, regardless of the presented order of the topics. These links are often established by both the author of a hypertext document and by the user, depending on the intent of the hypertext document. For example, travelling among links to the word "iron" in an article displayed within a graphical user interface in a data-processing system might lead the user to the periodic table of the chemical elements (i.e., linked by the word "iron"), or to a reference to the use of iron in weapons in Europe in the Dark Ages. The term "hypertext" was coined in the 1960s to describe documents, as presented by a computer, that express the nonlinear structure of ideas, as opposed to the linear format of books, film, and speech.

[0006] The term "hypermedia," on the other hand, more recently introduced, is nearly synonymous with "hypertext" but focuses on the nontextual components of hypertext, such as animation, recorded sound, and video. Hypermedia is the integration of graphics, sound, video, or any combination thereof into a primarily associative system of information storage and retrieval. Hypermedia, as well as hypertext, especially in an interactive format where choices are controlled by the user, is structured around the idea of offering a working and learning environment that parallels human thinking -- that is, an environment that allows the user to make associations between topics rather than move sequentially from one to the next, as in an alphabetic list. Hypermedia, as well as hypertext topics, are thus linked in a manner that allows the user to jump from one subject to other related subjects during a search for information. Hyperlink information is contained within hypermedia and hypertext documents, which allow a user to move back to "original" or referring network sites by the mere "click" (i.e., with a mouse or other pointing device) of the hyperlinked topic.

[0007] A typical networked system that utilizes hypertext and hypermedia conventions follows a client/server architecture. The "client" is a member of a class or group that uses the services of another class or group to which it is not related. Thus, in computing, a client is a process (i.e., roughly a program or task) that requests a service provided by another program. The client process utilizes the requested service without having to "know" any working details about the other program or the service itself. In a client/server architecture, particularly a networked system, a client is usually a computer that accesses shared network resources provided by another computer (i.e., a server).

[0008] A request by a user for news can be sent by a client application program to a server. A server is typically a remote computer system accessible over a remote network such as the Internet. The server scans and searches for raw (e.g., unprocessed) information sources (e.g., newswire feeds or newsgroups). Based

upon such requests by the user, the server presents filtered electronic information as server responses to the client process. The client process may be active in a first computer system, and the server process may be active in a second computer system, communicating with one another over a communications medium, thus providing distributed functionality and allowing multiple clients to take advantage of the information-gathering capabilities of the server.

[0009] Client and server communicate with one another utilizing the functionality provided by Hypertext-Transfer Protocol (HTTP). The World wide Web (WWW) or, simply, the "web," includes those servers adhering to this standard (i.e., HTTP) which are accessible to clients via a computer or data-processing system network address such as a Universal Resource Locator (URL). The network address can be referred to as a Universal Resource Locator address. For example, communication can be provided over a communications medium. In particular, the client and server may be coupled to one another via Serial Line Internet Protocol (SLIP) or TCP/IP connections for high-capacity communication. Active within the client is a first process, known as a "browser," which establishes the connection with the server and presents information to the user. The server itself executes corresponding server software which presents information to the client in the form of HTTP responses. The HTTP responses correspond to "web pages" constructed from a Hypertext Markup Language (HTML), or other server-generated data. Each web page can also be referred to simply as a "page."

[0010] The client and server typically display browsers and other remote network data for a user via a graphical user interface. A graphical user interface is a type of display format that enables a user to choose commands, start programs, and see lists of files and other options by pointing to pictorial representations (icons) and lists of menu items on the screen. Choices can be activated generally either with a keyboard or a mouse. Internet services are typically accessed by specifying a unique network address (i.e., Universal Resource Locator). The Universal Resource Locator address has two basic components, the protocol to be used and the object pathname. For example, the Universal Resource Locator address, "http://www.uspto.gov" (i.e., home page for the U.S. Patent and Trademark Office), specifies a hypertext-transfer protocol ("http") and a pathname of the server ("www.uspto.gov"). The server name is associated with a unique numeric value (TCP/IP address).

[0011] The evolution of personal computers over the last decade has accelerated the web and Internet toward useful everyday applications. Nearly every computer sold over the last several years has or will, at some point, become "on-line" to an Internet service provider. Somewhere between 20 and 30 million people around the globe use some form of Internet service on a regular basis. The graphical portion of the World Wide Web is

usually stocked with more than twenty-two million "pages" of content, with over one million new pages added every month.

[0012] Free or relatively inexpensive computer software applications such as Internet "search engines" make it simple to track down sites where an individual can obtain information on a topic of interest. A person may type in a subject or key word and generate a list of network sites (i.e., web sites). Thus, with "home pages" published by thousands of companies, universities, government agencies, museums, and municipalities, the Internet can be an invaluable resource. With a little practice, even new users can skim millions of web pages or thousands of newsgroups, not only for topics of general interest, but also to access precise bits of data. The market for Internet access and related applications is explosive and is growing faster than expected, doubling in size approximately every three months.

[0013] Because of the growth of the "Internet" and the so-called "World Wide Web" in recent years, users located in different geographical locations are now positioned to take advantage of this technology to accomplish collaborative, or team writing of documents. However, current tools do not allow for distributed reviews of documents via the web and the Internet. Current methods for team writing are typically time consuming and cumbersome and document intrusive. Commenting on various sections of reviewable documents by various team members leads, under current conditions, to documents cluttered with comments that are often indistinguishable from the document itself. Partial solutions have been attempted which either present a much more intrusive review interface or lack general use with non-HTML formats. Based on the foregoing it can be seen that a need exists for non-intrusive and easy-to-use document review interface that can be utilized by different reviewers at different geographic locations over the World Wide Web or other similar distributed computer networks.

Disclosure of the Invention

[0014] A method and system are provided in a computer network for assisting users in collectively creating documents with minimal document intrusiveness via the computer network. Initially, a document is displayed in a graphic interface of a computer in a computer network, such that the document may also be displayed at any one of a number of computers within the computer network. Next, portions of the document are designated which may be commented upon by users. These portions of the document are automatically associated with displayable interface wherein users may enter comments pertaining to the document. The displayable interface is then displayed within the graphic interface, in response to user input. A user is then permitted to enter comments pertaining to the document within the displayable interface, such that the comments may be sep-

arately stored, subsequently retrieved and utilized in the creation of the document without cluttering. The displayable interface is then automatically closed upon completion of an entry of comments pertaining to the document within the displayable interface.

Brief Description of the Drawings

[0015]

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[0016] The invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

FIG. 1 illustrates a block diagram illustrative of a client/server architecture which can be utilized to implement the method and system of the present invention;

FIG. 2 depicts a detailed block diagram illustrative of a client/server architecture which can be utilized to implement the method and system of the present invention;

FIG. 3 is a diagram illustrative of a computer network which can be implemented in accordance with the method and system of the present invention;

FIG. 4 illustrates a hypertext document contained within a graphical user interface window which can be utilized to implement the method and system of the present invention;

FIG. 5 depicts a document displayed within a web browser of a graphical interface in accordance with the method and system of the present invention;

FIG. 6 illustrates a document with associated review buttons displayed within a web browser of a graphical interface in accordance with the method and system of the present invention;

FIG. 7 depicts a mail pop-up interface associated with a review button in accordance with the method and system of the present invention;

FIG. 8 illustrates a comment pop-up interface associated with a review button in accordance with the method and system of the present invention;

FIG. 9 depicts a block diagram illustrative of a web-based document review tool in accordance with a preferred embodiment of the method and system of the present invention; and

FIG. 10 depicts a flowchart of operations illustrating a method for a web-based document review tool in accordance with a preferred embodiment of the

present invention.

Detailed Description of the Invention

[0017] With reference now to the figures and, in particular, with reference to **FIG. 1**, there is depicted a pictorial representation of a client-server architecture in which the present invention may be implemented in accordance with a preferred embodiment of the present invention. Note that in **FIG. 1**, **FIG. 2**, and **FIG. 3**, like parts are indicated by like numbers. In **FIG. 1**, user requests **91** for news are sent by a client application program **92** to a server **88**. Server **88** can be a remote computer system accessible over a remote network such as the Internet. Server **88** performs scanning and searching of raw (e.g., unprocessed) information sources (e.g., newswire feeds or newsgroups) and, based upon these user requests, presents the filtered electronic information as server responses **93** to the client process. The client process may be active in a first computer system, and the server process may be active in a second computer system and communicate with the first computer system over a communications medium, thus providing distributed functionality and allowing multiple clients to take advantage of the information-gathering capabilities of the server.

[0018] **FIG. 2** illustrates a detailed block diagram of a client/server architecture which can be utilized in accordance with the method and system of the present invention. Although the client and server are processes which are operative within two computer systems, these processes being generated from a high-level programming language (e.g., PERL), which is interpreted and executed in a computer system at run-time (e.g., a workstation), it can be appreciated by one skilled in the art that they may be implemented in a variety of hardware devices, either programmed or dedicated.

[0019] Client **92** and server **88** communicate using the functionality provided by HTTP. Active within client **92** is a first process, browser **72**, which establishes the connections with server **88**, and presents information to the user. Such browsers are often referred to in the art of computer networking as "web browsers." Any number of commercially or publicly available browsers such as Netscape™ may be utilized in accordance with a preferred embodiment of the present invention. A web browser is thus a client application which allows users to view HTML documents on the World Wide Web, another network, or the user's computer.

[0020] Server **88** executes the corresponding server software which presents information to the client in the form of HTTP responses **90**. The HTTP responses **90** correspond with web "pages," which can be represented by utilizing Hypertext Markup Language (HTML), or other data generated by server **88**. For example, under the Mosaic-brand browser, in addition to HTML functionality **94** provided by server **88**, a Common Gateway Interface (CGI) **96** is provided which allows the client program to

direct server **88** to commence execution of a specified program contained within server **88**. This may include a search engine which scans received information in the server for presentation to the user controlling the client.

[0021] Using this interface, and HTTP responses **90**, the server may notify the client of the results of that execution upon completion. Common Gateway Interface (CGI) **96** is one form of a "gateway," a device utilized to connect dissimilar networks (i.e., networks utilizing different communication protocols) so that electronic information can be passed from one network to the other. Gateways transfer electronic information, converting such information to a form compatible with the protocols used by the second network for transport and delivery.

[0022] In order to control the parameters of the execution of this server-resident process, the client may direct the filling out of certain "forms" from the browser. This is provided by the "fill-in-forms" functionality (i.e., forms **98**), which is provided by some browsers, such as the Mosaic brand browser described herein. This functionality allows the user via a client application program to specify terms in which the server causes an application program to function (e.g., terms or keywords contained in the types of stories/articles which are of interest to the user).

[0023] FIG. 3 is a diagram illustrative of a computer network **80** which can be implemented in accordance with the method and system of the present invention. Computer network **80** is representative of a remote network, specifically the Internet, a known computer network based on the client-server model discussed earlier. Conceptually, the Internet includes a large network of servers **88** which are accessible by clients **92**, typically users of personal computers, through some private Internet-access provider **84** (e.g., such as Internet America) or an on-line service provider **86** (e.g., such as America On-Line, Prodigy, Compuserve, and the like). Each of the clients **92** may run a browser, a known software tool utilized to access servers **88** via the access providers **84**. Each server **88** operates a web site which supports files in the form of documents and pages. A network path to servers **88** is identified by a Universal Resource Locator having a known syntax for defining a network collection.

[0024] FIG. 4 illustrates an example hypertext document **123** contained within a graphical user interface window **104** which can be utilized in accordance with the method and system of the present invention. Window **104** displays a portion of a hypertext document **123** constructed from a mark-up language, such as Hypertext Mark-up Language (HTML). The size and position of elevator **120** within scroll bar **116** corresponds to the size and position of the current viewable page in relation to hypertext document **123**. Hypertext document **123** can be accessed from a data-processing system contained within a remote network, such as the Internet.

[0025] In the example of FIG. 4, in view of the fact that hypertext document **123** includes too many pages to

view simultaneously, the user can position a mouse cursor over up-arrow section **106** or down-arrow section **108** of scroll bar **116** and click a pointing device (e.g., a mouse) to scroll hypertext document **123** upward or downward, as appropriate. A horizontal scroll bar **118** includes arrow section **112** and arrow section **110** for scrolling hypertext document **123** respectively left or right. Also, an optional arrow section **114** allows a user to scroll the document right. Thus, the graphical user interface that contains window **104** and hypertext document **123** is a type of computer display format that enables a user to choose commands, start programs, and see lists of files and other options by pointing to pictorial representations (i.e., icons) and lists of menu items on the screen. Choices can generally be activated either with a keyboard or a mouse.

[0026] Hypertext document **123** contains specific string text **124** rendered on the screen by the graphical user interface to stand out from the surrounding text. String text **124** is rendered in a different format. In the example of FIG. 4, string text **124** is rendered as **IBM**. The different font format of string text **124** is an indication that the text is hyper-linked to "jump" to another document. When a user "clicks" on string text **124** with a mouse or other pointing device, the graphical user interface shifts the presently viewed hypertext document **123** to another hyper-linked document.

[0027] FIG. 5 depicts a document **134** displayed within a web browser **130** of a graphical user interface window in accordance with the method and system of the present invention. Document **134** is a document which multiple users may desire to collectively write (i.e., team write). However, in standard review practices, team writing is hampered by the fact that members of the writing team may be located in different geographical locations. Thus, reviewing is difficult to accomplish under present conditions. Those skilled in the art will appreciate that browser **134** may be included within a graphical user interface window such as window **104** of FIG. 4. In the example depicted in FIG. 5, document **134** is displayed within a Netscape™ browser. Associated with document **134** is a table of contents **132** to which a user can click on a particular link to move document **134** to a location associated with that link. For example, those skilled in the art will appreciate that "clicking" with a mouse or other pointing device the link titled "typographic and keying conventions" displayed with table of contents **132** will reposition document **134** at a section associated with that particular link. In FIG. 5 to FIG. 8 like parts are indicated by like reference numerals.

[0028] FIG. 6 illustrates a document **134** with associated review buttons displayed within a web browser **130** of a graphical interface in accordance with the method and system of the present invention. Document **134** has been modified to include review buttons **136**, **138** and **140**. Capitalizing on the ubiquity of web browsers within development organizations, the method and system according to the present invention allows for the conv r-

sion of existing document source formats into a web-compatible review format. Users who have controlled access may comment on writer-designated locations with the document, comment on other general features, and review comments made by other reviewers. Such a method and system, as elaborated herein, operates via "pop-up" interfaces so that the document is largely free from intrusive review markup and symbols. Server based code manages the logging and redisplay or review comments.

[0029] Review buttons 136 and 138 are unsolicited review buttons, which when activated by a user via mouse "click," prompts the display of a pop-up window to which the user may or may not comment. Review buttons 136 and 138 are set by the author or another appropriate user at unsolicited comment points within document 130. Such unsolicited comment points are arbitrary points to which unsolicited review comments may be attached. These are based on source elements, selectable by style. For example, a typical style-based implementation might attach comment points for unsolicited comments to paragraphs, definition list parts, examples, long quotes, list items, and so forth. The points enable response forms to be opened, from which a reader or reviewer may mail a comment or correction to a receiving address. Other implementations of this process may locate these arbitrary points on algorithmically-determined characteristics of discourse, such as at the sentence level, or at topics or significant phrases.

[0030] Review button 140 is a solicited review button, which a reviewer is required to review and comment upon at designated review points within document 130. Designated review points are specific points for which specific interaction with reviewers is desired. Such specific points are based on source elements which a writer has identified as being significant. For example, SGML elements altered subsequent to a previous edition might have been flagged with a revision attribute. In conversion to HTML, the scope of the altered portions are highlighted in colour and an appropriate review button is added: at the beginning or end of such portions. Such review buttons invoke interaction with the review server and its database. Review button 140 is an example of such a review button.

[0031] In either case, disruption of the source document by review comments is minimized so that the user interface remains consistent regardless of the number of review comments. Each of these review buttons can be located anywhere within document 130 and associated with a particular element (i.e., word, phrase, text, symbol, etc.) within document 130. The location of such review buttons within document 130 is a choice which can be determined by the author of document 130. Thus, in this manner, the comments are essentially controlled by the author of the document. Sections of document 130 which the document author desires others to comment upon can be made known to others by altering the colour or shape of text, phrases, paragraphs or sym-

bols located near or about a particular solicited review button. Associated with document 130 is a scrollable section 144 in which a table of contents for document 130 is displayed.

5 [0032] FIG. 7 depicts a "pop-up" mail interface 150 associated with a review button in accordance with the method and system of the present invention. When a review button such as review buttons 136, 138 and 140 are "clicked" with a mouse or other pointing device, a
10 pop-up window such as "pop-up" mail interface 150 is displayed for the user. In this particular example, the "pop-up" mail interface allows a user to comment on a particular text or section of document 130 such that these comments can be subsequently sent via a "mail" function to the author or another designated reviewer. Those skilled in the art will appreciate that such "mail" functions are well-known and can be implemented in accordance with a preferred embodiment of the present invention. "Pop-up" mail interface 150 also includes
20 an area 152 in which users can write comments. "Pop-up" mail interface 150 is essentially a window utilized to supplement the interaction in the primary window it is dependent upon (i.e., the window in which browser 130 is displayed).

25 [0033] FIG. 8 illustrates a comment "pop-up" interface 160 associated with review buttons in accordance with the method and system of the present invention. When a review button such as review buttons 136, 138 and 140 are "clicked" with a mouse or other pointing device, a pop-up window such as comment "pop-up" interface 160 is displayed for the user. Comment "pop-up" interface 160 allows users to comment on portions of the document designated by the author. In the example depicted in FIG. 8, the comment may be logged and re-
30 corded and retrieved subsequently by the author of the document for use in completing the document. When the user completes entry of the comments in comment "pop-up" interface 160, comment "pop-up" interface 160 is closed. The comments are thus entered by the user without altering document 130. These comments can be entered by the user within area 162. Thus, a minimalist document review interface is presented according to the method and system of the present invention. The comments are not part of the reviewed document itself, but are instead associated with the document by appropriate identification links.

35 [0034] FIG. 9 depicts a block diagram 200 illustrative of a web-based document review tool in accordance with a preferred embodiment of the method and system of the present invention. In FIG. 9, a tagged document source 210 is fed to a parser 212. The tagged document source can be based on any tagged document. Those skilled in the art will appreciate that such tagged documents include, but are not limited to, SGML, BookMaster™, IPF, HTML, or XML tagged documents. Parser 212 breaks tagged document source 210 into smaller
50 chunks so that a program can subsequently act upon the information (i.e., tagged document source 210)

which was input to parser 212. Dashed lines 214 surround the actual transformation area in which the tagged document source is converted into a reviewable document. Data from parser 212 is input to an HTML transform function 216 which allows the document to have an "r" review option. Output from HTML transform function 216 results in a reviewable HTML document 218 which provides access to the pop-up interfaces described herein.

[0035] Further, the manipulations performed are often referred to in terms, such as adding or comparing, which are commonly associated with mental operations performed by a human operator. No such capability of a human operator is necessary or desirable in most cases in any of the operations described herein which form part of the present invention; the operations are machine operations. Useful machines for performing operations of a preferred embodiment of the present invention include data-processing systems such as general purpose digital computers or other similar devices. In all cases the distinction between the method operations in operating a computer and the method of computation itself should be borne in mind. The present invention relates to method steps for operating a computer in processing electrical or other (e.g. mechanical, chemical) physical signals to generate other desired physical signals.

[0036] A user/reviewer 220 can access web browser 222 which provides two-way data flow to a server-side review application 224. Server-side review application 224 provides the actual pop-up interfaces, described herein, which allow a user to comment upon a particular portion of the reviewable document. A comment database 226 of solicited comments, as described herein, is provided for the server-side review application 224. A "mail to" function 228 is also provided for the server-side review application 224. Comment database 226 thus provides interaction with comment "pop-up" interface 160 of FIG. 8, and "mail to" function 228 interacts with "pop-up" mail interface 150 of FIG. 7.

[0037] FIG. 10 depicts a high-level flowchart of operations 240 illustrating a method for a web-based review tool in accordance with a preferred embodiment of the present invention. It can be appreciated by those skilled in the art that FIG. 10 presents a self-consistent sequence of steps leading to a desired result. The steps are those requiring physical manipulation of physical quantities. Usually, although not necessarily, these quantities take the form of electrical or magnetic signals capable of being stored, transferred, combined, compared, and otherwise manipulated. It has proven convenient at times by those skilled in the art, to refer to these signals as bits, values, elements, symbols, characters, terms, numbers, or the like. It should be borne in mind, however, that all of these and similar terms are to be associated with the appropriate physical quantities and are merely convenient labels applied to these quantities.

[0038] Thus, as depicted at block 242, the process is initiated within a computer network such as the so-called "World Wide Web" for assisting users in collectively creating documents with minimal document intrusiveness via the particular computer network in use. As illustrated at block 244, a document is displayed within a graphical user interface of a web browser application. As depicted at block 246, portions of the document may be designated upon which an author of the document desires other reviewers to comment. These portions of the document can be randomly designated as in the case of unsolicited review buttons as described herein, or can be deliberately designated as in the case of the solicited review buttons described herein. In either case, displayable interfaces are associated with these review buttons, as described at block 248. Examples of such displayable interfaces include comment "pop-up" interface 160 of FIG. 8, and "pop-up" mail interface 150 of FIG. 7. As indicated at block 250, in response to user input, such interfaces are displayed for subsequent user interaction. Once displayed, as described at block 252, a user is permitted to enter comments within the reviewable interface related to the document itself. Such user input can be, for example, a "click" of a particular review button via a mouse or other pointing device. Upon completion of the entry of the comments, the displayable interface is then closed, as illustrated at block 254. Thus the comments entered within the displayable interfaces are not actually part of the document itself but can later be retrieved by the author for utilization in compiling the document. The comments thus do not clutter the document and can be readily accessed by the author.

[0039] It is important to note that, while the present invention has been (and will continue to be) described in the context of a fully functional computer system, those skilled in the art can appreciate that the present invention is capable of being distributed as a program product in a variety of forms and that the present invention applies equally regardless of the particular type of signal-bearing media utilized to actually carry out the distribution. Examples of signal-bearing media include: recordable-type media, such as floppy discs, hard-disk drives, audio CDs and CD ROMs, and transmission-type media, such as digital and analog communication links.

[0040] While the invention has been particularly shown as described with reference to a preferred embodiment, it will be understood by those skilled in the art that various changes in form and detail may be made therein without departing from the spirit and scope of the invention. Utilization of the Internet in association with the method and system described herein is not a necessary feature of the present invention. For example, the present invention is applicable to other communication networks besides the Internet, including so-called "intranets" (i.e., networks that are internal to particular organizations). The Internet and so-called "World Wide Web", as described herein, are merely one example of

a remote network that can be utilized in accordance with a preferred embodiment of the present invention.

Claims

1. A method in a computer network for assisting users in collectively creating documents with minimal document intrusiveness via said computer network, said method comprising the steps of:

displaying (244) a document (134) in a graphic interface of a computer in a computer network, such that said document may also be displayed at any one of a number of computers within said computer network;

designating (246) portions (136, 138, 140) of said document which may be commented upon by users;

automatically associating (248) with said portions of said document, a displayable interface (150, 160) wherein users may enter comments pertaining to said document;

displaying (250) said displayable interface within said graphic interface, in response to user input; and

permitting (252) a user to enter comments pertaining to said document within said displayable interface, such that said comments may be stored, subsequently retrieved and utilized in the creation of said document.

2. A method as claimed in claim 1 further comprising the step of automatically closing (254) said displayable interface (150, 160) upon completion of an entry of comments pertaining to said document (134) within said displayable interface.

3. A method as claimed in claim 2 wherein the step of displaying (244) a document (134) in a graphic interface of a computer in a computer network, such that said document may also be displayed at any one of a number of computers within said computer network, further comprises the step of:

displaying a document within a browser (72) of a graphic interface of a computer in a computer network, such that said document may also be displayed at any one of a number of computers within said computer network.

4. A method as claimed in claim 3 wherein the step of automatically associating (248) with said portions of said document (134), a displayable interface

(150, 160) wherein users may enter comments pertaining to said document, further comprises the step of:

automatically associating with said portions of said document, a displayable interface wherein users may enter comments pertaining to said document, such that said displayable interface comprises a pop-up interface.

5. A method as claimed in claim 4 wherein the step of permitting (252) a user to enter comments pertaining to said document (134) within said displayable interface (150, 160), such that said comments may be stored, subsequently retrieved and utilized in the creation of said document, further comprises the step of:

permitting a user to enter comments pertaining to said document within said displayable interface, such that said comments may be stored, subsequently retrieved, transferred to designated users, and utilized in the creation of said document.

6. A method as claimed in claim 5 wherein the step of automatically associating (248) with said portions of said document, a displayable interface wherein users may enter comments pertaining to said document, further comprises the step of:

automatically associating with said portions of said document, a displayable interface (150) comprising a displayable e-mail form wherein users may enter comments pertaining to said document.

7. A system in a computer network for assisting users in collectively creating documents with minimal document intrusiveness via said computer network, said system comprising:

means for displaying (244) a document (134) in a graphic interface of a computer in a computer network, such that said document may also be displayed at any one of a number of computers within said computer network;

means for designating (246) portions (136, 138, 140) of said document which may be commented upon by users;

means for automatically associating (248) with said portions of said document, a displayable interface (150, 160) wherein users may enter comments pertaining to said document;

means for displaying (250) said displayable in-

terface within said graphic interface, in response to user input; and

means for permitting (252) a user to enter comments pertaining to said document within said displayable interface, such that said comments may be stored, subsequently retrieved and utilized in the creation of said document.

8. A system as claimed in claim 7 further comprising means for automatically closing (254) said displayable interface (150, 160) upon completion of an entry of comments pertaining to said document (134) within said displayable interface.

9. A system as claimed in claim 8 wherein said means for displaying (244) a document (134) in a graphic interface of a computer in a computer network, such that said document may also be displayed at any one of a number of computers within said computer network, further comprises:

means for displaying a document within a browser (72) of a graphic interface of a computer in a computer network, such that said document may also be displayed at any one of a number of computers within said computer network.

10. A system as claimed in claim 9 wherein said means for automatically associating (248) with said portions of said document (134), a displayable interface (150, 160) wherein users may enter comments pertaining to said document, further comprises:

means for automatically associating with said portions of said document, a displayable interface wherein users may enter comments pertaining to said document, such that said displayable interface comprises a pop-up interface.

11. A system as claimed in claim 10 wherein said means for permitting (252) a user to enter comments pertaining to said document (134) within said displayable interface (150, 160), such that said comments may be stored, subsequently retrieved and utilized in the creation of said document, further comprises:

means for permitting a user to enter comments pertaining to said document within said displayable interface, such that said comments may be stored, subsequently retrieved, transferred to designated users, and utilized in the creation of said document.

12. A system as claimed in claim 12 wher in said

means for automatically associating (248) with said portions of said document, a displayable interface wherein users may enter comments pertaining to said document, further comprises:

means for automatically associating with said portions of said document, a displayable interface (150) comprising a displayable e-mail form wherein users may enter comments pertaining to said document.

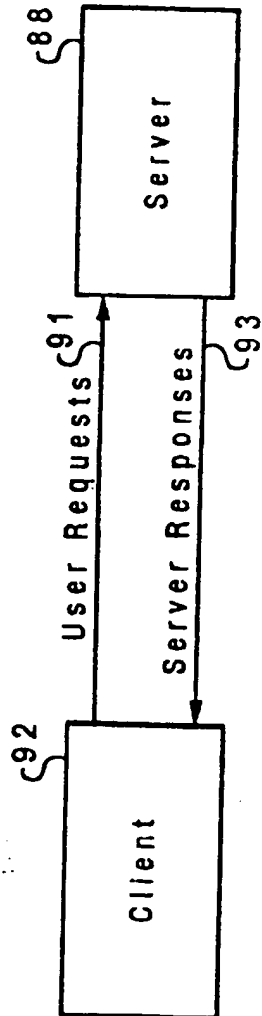


Fig. 1

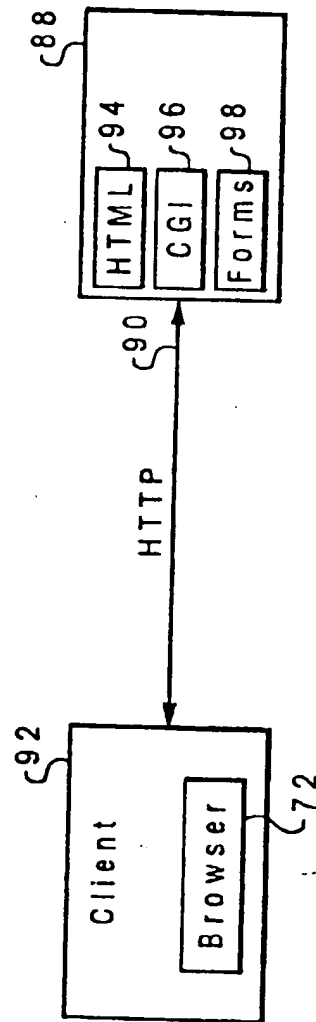


Fig. 2

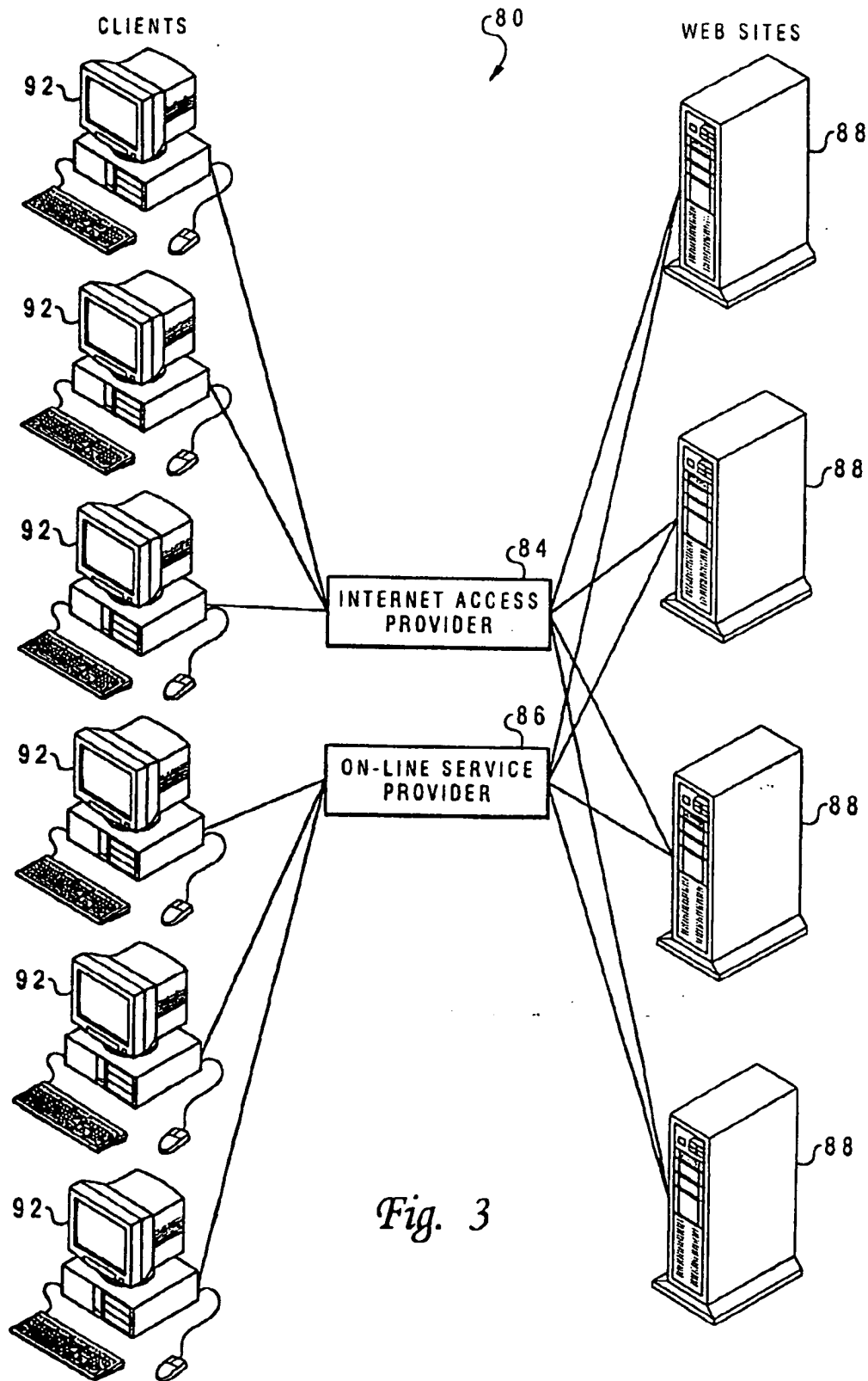


Fig. 3

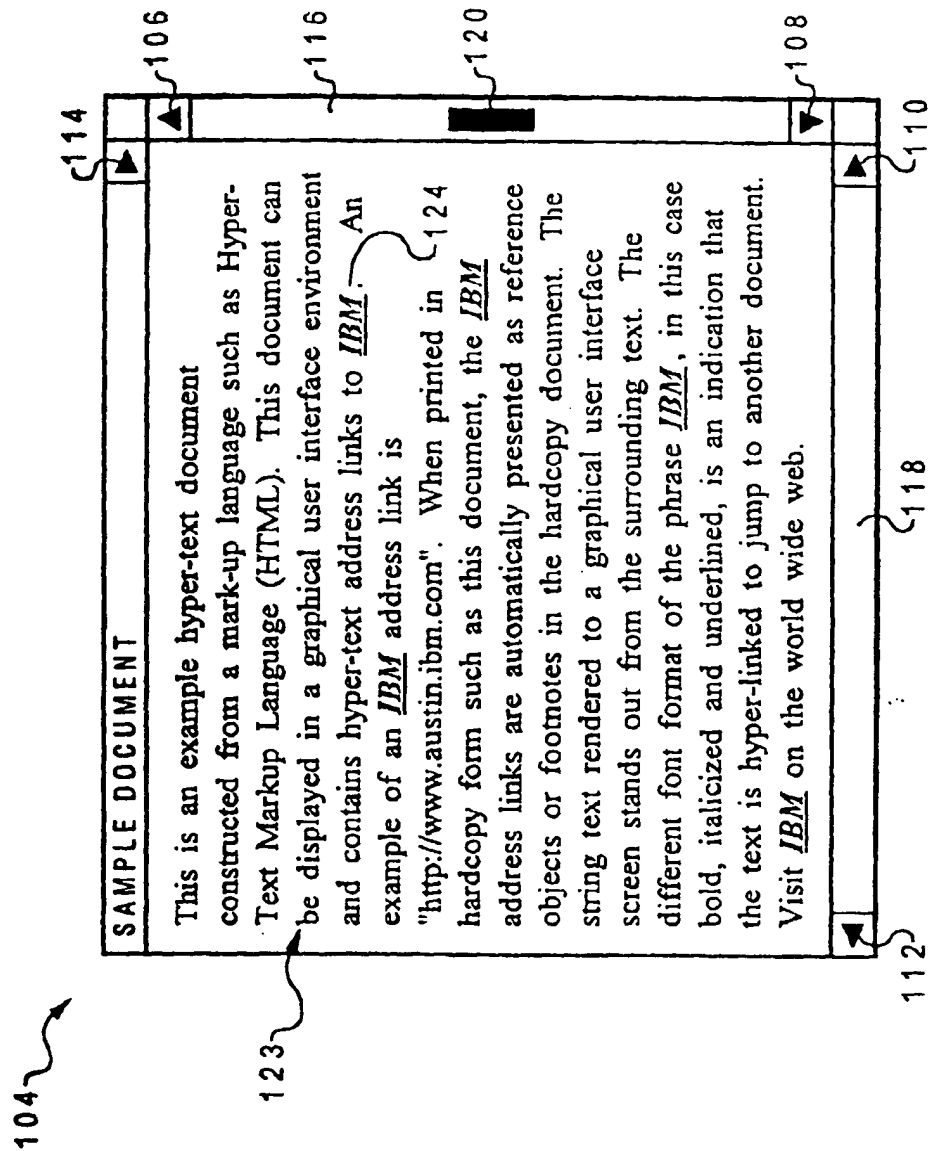
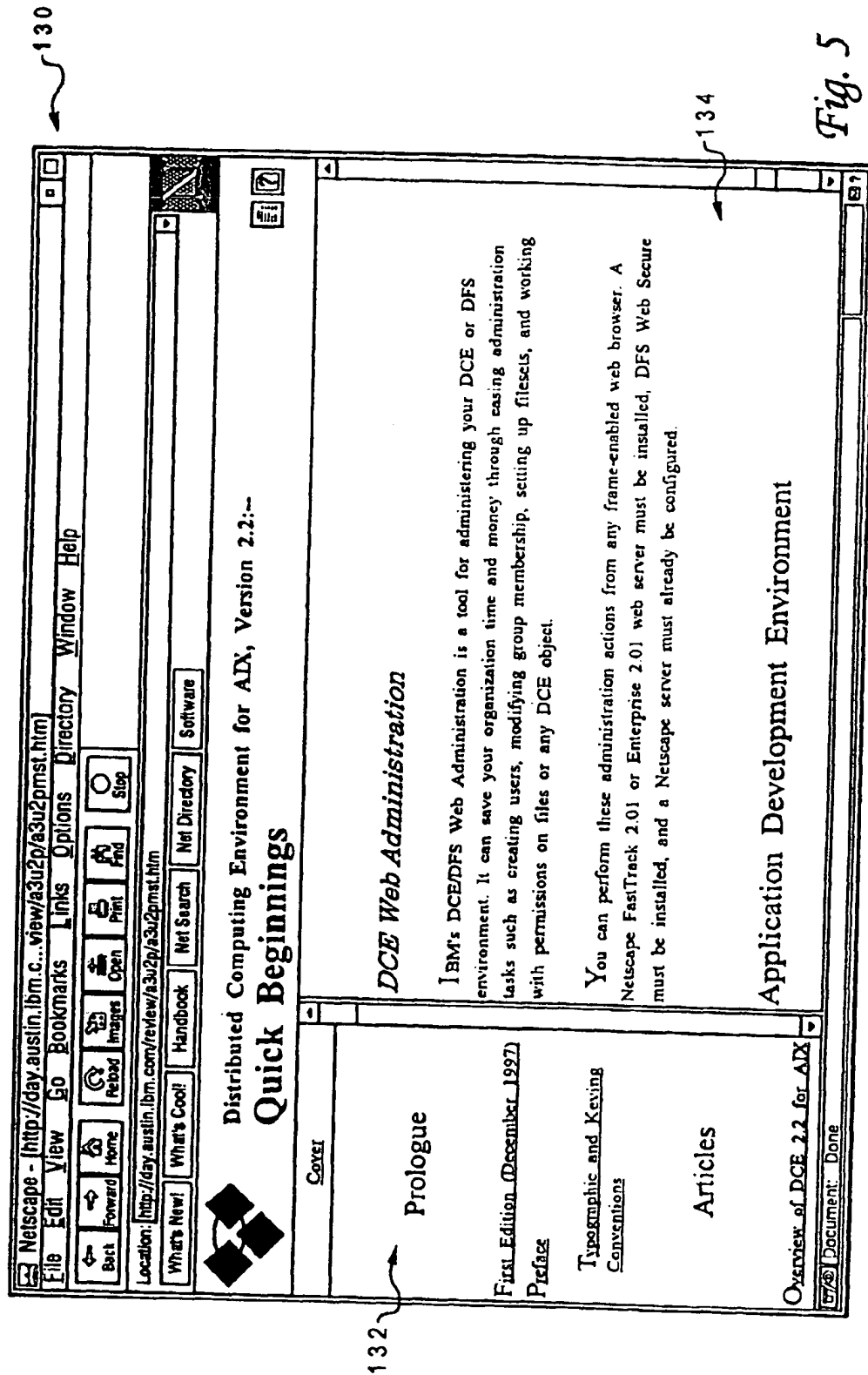
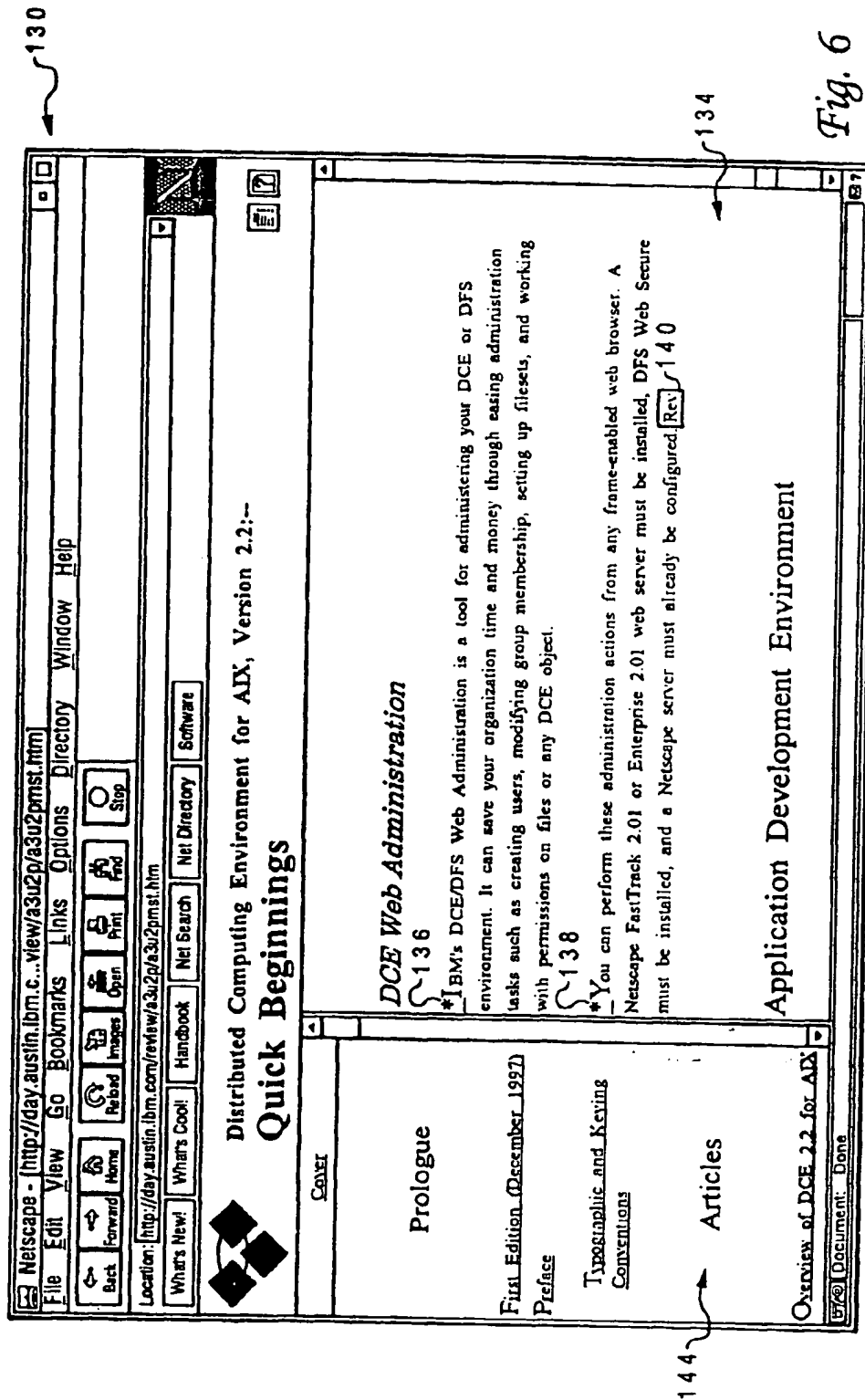


Fig. 4





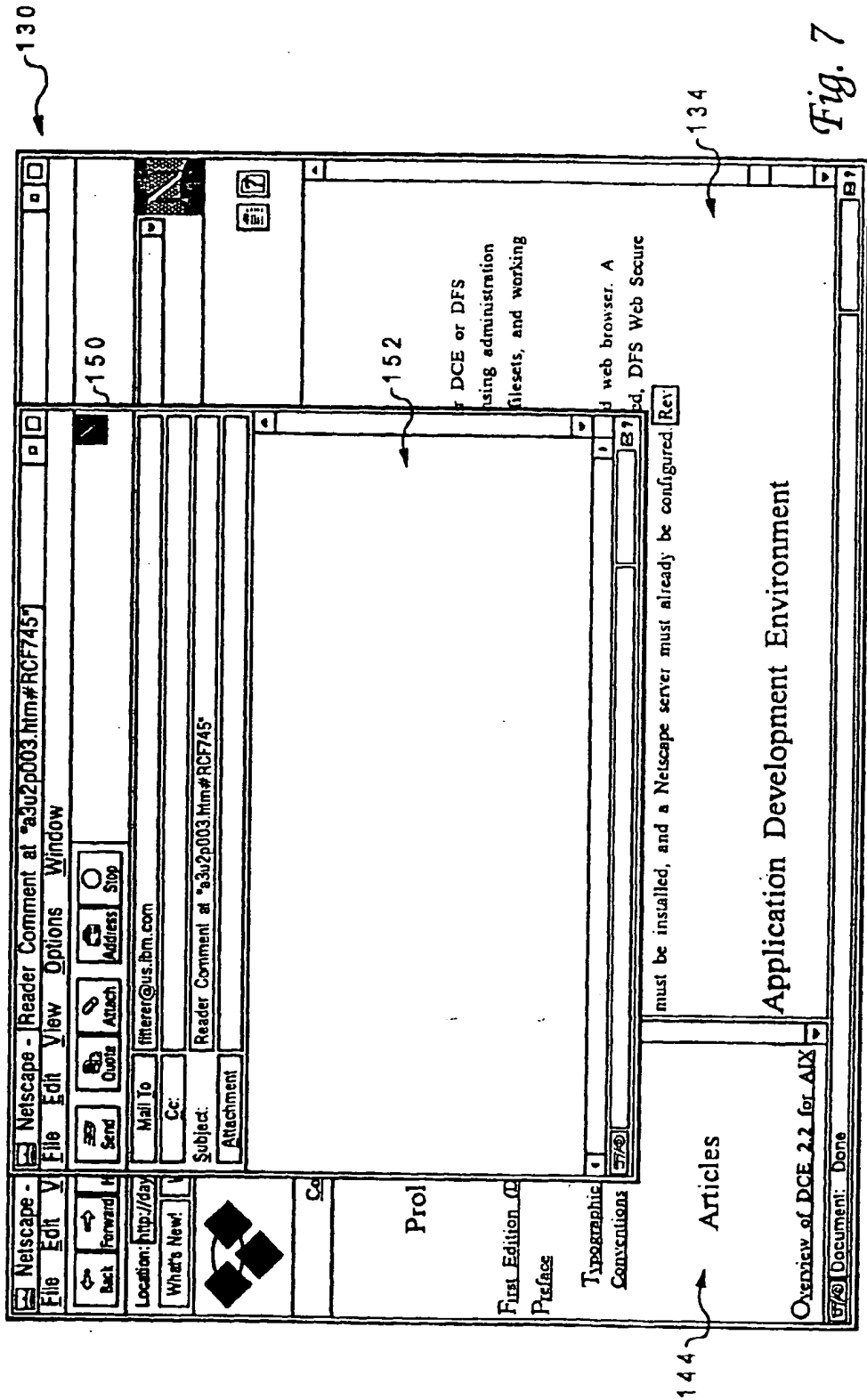
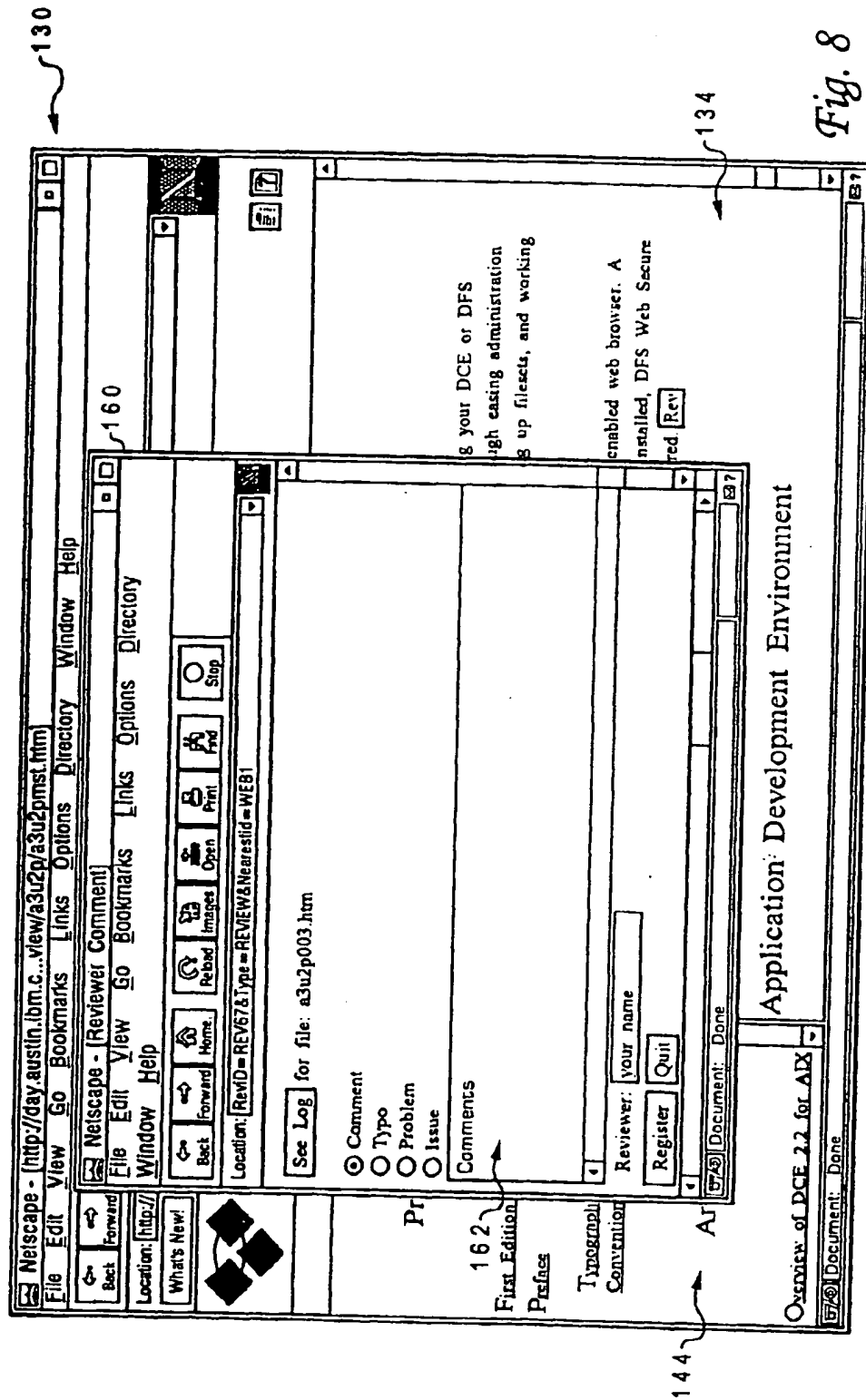


Fig. 7



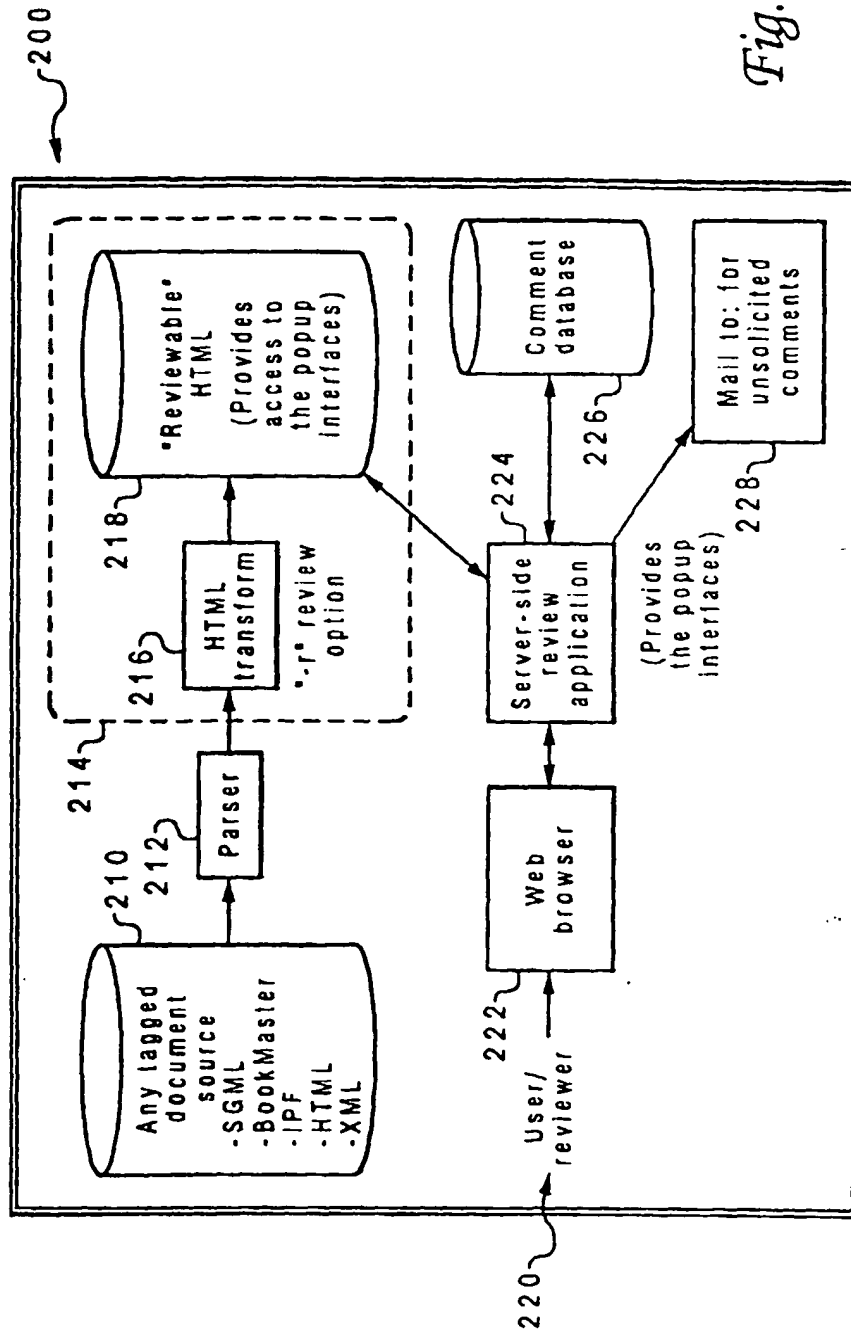


Fig. 9

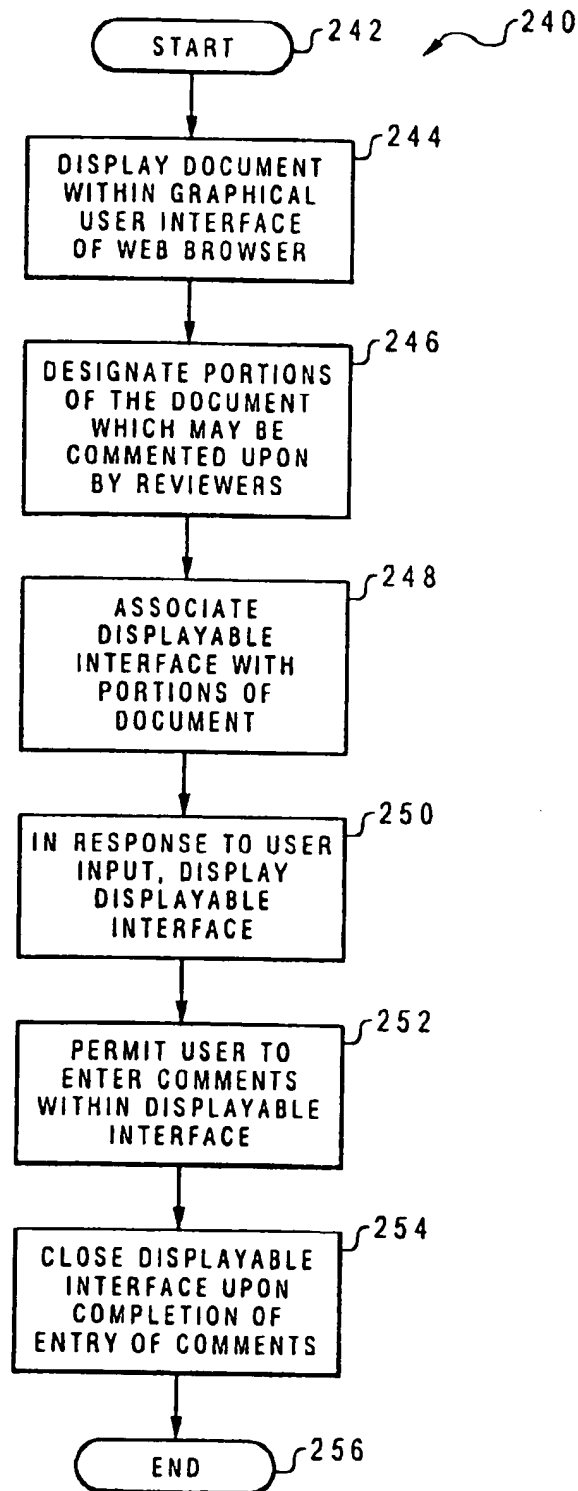


Fig. 10